

§ 600.402-77 Definitions.

The definitions in § 600.002 apply to this subpart.

§ 600.403-77 Abbreviations.

The abbreviations in § 600.003 apply to this subpart.

§ 600.404-77 Section numbering, construction.

The section numbering procedure specified in § 600.004 applies to this subpart.

§ 600.405-77 Dealer requirements.

(a) Each dealer shall prominently display at each location where new automobiles are offered for sale booklets containing the information specified in § 600.407. The dealer shall provide these booklets without charge and in sufficient quantity to be available for retention by each prospective purchaser upon his request. The dealer will be expected to make these booklets available as soon as they are received by the dealer, but in no case later than 15 working days after notification is given of booklet availability.

(b) The dealer shall display these booklets in the same manner and in each location used to display brochures describing the automobiles offered for sale by the dealer. The display shall include information that similar booklets containing the EPA fuel economy information are also available through the mail by writing to Fuel Economy, Pueblo, Colorado 81009.

(c) The dealer shall display the booklet applicable to each model year automobile offered for sale at the location. If, as described in § 600.406, a regional edition of the booklet is prepared for California automobiles:

(1) Each dealer who offers automobiles for sale at a location within the State of California shall display the California regional edition of the booklet.

(2) Each dealer who offers automobiles for sale at locations outside the State of California, and expects that at least 50 percent of the automobiles eventually sold at the location during the model year will be California configurations, shall display the California regional edition of the book-

let. These dealers may also display the national edition of the booklet provided both editions are displayed with equal prominence.

§ 600.406-77 [Reserved]

§ 600.407-77 Booklets displayed by dealers.

(a) Booklets displayed by dealers in order to fulfill the obligations of § 600.405 may be either the Gas Mileage Guide published by the FEA Administrator or a booklet approved by the Administrator of EPA containing the same information, format, and order as the booklet published by the FEA Administrator.

(b) The booklet may highlight the dealer's product line by contrasting color of ink or boldface type and may include other supplemental information regarding the dealer's product line subject to approval by the Administrator.

(c) A manufacturer's name and logo or a dealer's name and address or both may appear on the back cover of the booklet.

Subpart F—Fuel Economy Regulations for Model Year 1978 Passenger Automobiles and for 1979 and Later Model Year Automobiles (Light Trucks and Passenger Automobiles)—Procedures for Determining Manufacturer's Average Fuel Economy

AUTHORITY: Sec. 301, Pub. L. 94-163, 89 Stat. 901 (15 U.S.C. 2001, 2003, 2005, 2006).

SOURCE: 42 FR 45662, Sept. 12, 1977, unless otherwise noted.

§ 600.501-85 General applicability.

(a) Except as provided in paragraph (c) of this section, the provisions of this subpart are applicable to 1985 and later model year gasoline-fueled and diesel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

(c) Subject to prior approval by the Administrator, manufacturers may optionally implement, for 1985 model year vehicles, provisions of this subpart that are applicable to 1986 and later model year vehicles.

[49 FR 13847, Apr. 6, 1984]

§ 600.501-86 General applicability.

(a) The provisions of this subpart are applicable to 1986 and later model year gasoline-fueled and diesel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[49 FR 13853, Apr. 6, 1984]

§ 600.501-93 General applicability.

(a) The provisions of this subpart are applicable to 1993 and later model year gasoline-fueled, diesel-fueled, alcohol-fueled, natural gas-fueled, alcohol dual fuel and natural gas dual fuel automobiles.

(b)(1) Manufacturers that produce only electric vehicles are exempt from the requirement of this subpart, except with regard to the requirements in those sections pertaining specifically to electric vehicles.

(2) Manufacturers with worldwide production (excluding electric vehicle production) of less than 10,000 gasoline-fueled and/or diesel powered passenger automobiles and light trucks may optionally comply with the electric vehicle requirements in this subpart.

[59 FR 39659, Aug. 3, 1994]

§ 600.502-81 Definitions.

(a) The following definitions apply beginning with the 1979 model year. The definitions in § 600.502-78 remain effective except that provision (a)(2)(ii) is hereby superseded. The definitions in § 600.002 also apply to this subpart.

(1) "Declared value" of imported components shall be:

(i) The value at which components are declared by the importer to the U.S. Customs Service at the date of entry into the customs territory of the United States, or

(ii) With respect to imports into Canada, the declared value of such components as if they were declared as imports into the United States at the date of entry into Canada, or

(iii) With respect to imports into Mexico (when § 600.511-80(b)(3) applies), the declared value of such components as if they were declared as imports into the United States at the date of entry into Mexico.

(2) *Cost of production* of a car line shall mean the aggregate of the products of:

(i) The average U.S. dealer wholesale price for such car line as computed from each official dealer price list effective during the course of a model year, and

(ii) The number of automobiles within the car line produced during the part of the model year that the price list was in effect.

(3) *Equivalent petroleum-based fuel economy value* means a number which represents the average number of miles traveled by an electric vehicle per gallon of gasoline.

[45 FR 49262, July 24, 1980, as amended at 59 FR 678, Jan. 6, 1994; 59 FR 33914, July 1, 1994]

§ 600.503-78 Abbreviations.

The abbreviations in § 600.003 apply to this subpart.

§ 600.504-78 Section numbering, construction.

The section numbering procedure set forth in § 600.004 applies to this subpart.

§ 600.505-78 Recordkeeping.

The recordkeeping procedure set forth in § 600.005 applies to this subpart.

§ 600.507-86 Running change data requirements.

(a) Except as specified in paragraph (d) of this section, the manufacturer shall submit additional running change fuel economy data as specified in paragraph (b) of this section for any running change approved or implemented under § 86.079-32, § 86.079-33, or § 86.082-34 which:

- (1) Creates a new base level or,
- (2) Affects an existing base level by:
 - (i) Adding an axle ratio which is at least 10 percent larger (or, optionally, 10 percent smaller) than the largest axle ratio tested.

- (ii) Increasing (or, optionally, decreasing) the road-load horsepower for a subconfiguration by 10 percent or more for the individual running change or, when considered cumulatively, since original certification (for each cumulative 10 percent increase using the originally certified road-load horsepower as a base).

- (iii) Adding a new subconfiguration by increasing (or, optionally, decreasing) the equivalent test weight for any previously tested subconfiguration in the base level.

(b)(1) The additional running change fuel economy data requirement in paragraph (a) of this section will be determined based on the sales of the vehicle configurations in the created or affected base level(s) as updated at the time of running change approval.

(2) Within each newly created base level as specified in paragraph (a)(1) of this section, the manufacturer shall submit data from the highest projected total model year sales subconfiguration within the highest projected total model year sales configuration in the base level.

(3) Within each base level affected by a running change as specified in paragraph (a)(2) of this section, fuel economy data shall be submitted for the vehicle configuration created or affected by the running change which has the highest total model year sales. The test vehicle shall be of the subconfiguration created by the running change which has the highest projected total model year sales within the applicable vehicle configuration.

(c) The manufacturer shall submit the fuel economy data required by this

section to the Administrator in accordance with § 600.314(b).

(d) For those model types created under § 600.207(a)(2), the manufacturer shall submit data for each subconfiguration added by a running change.

[49 FR 13854, Apr. 6, 1984, as amended at 49 FR 48150, Dec. 10, 1984]

§ 600.509-86 Voluntary submission of additional data.

(a) The manufacturer may, at his option, submit data in addition to the data required by the Administrator.

(b) Additional fuel economy data may be submitted by the manufacturer for any vehicle configuration which is to be tested as required in § 600.507 or for which fuel economy data were previously submitted under paragraph (c) of this section.

(c) Within a base level, additional fuel economy data may be submitted by manufacturing for any vehicle configuration which is not required to be tested by § 600.507.

[49 FR 13854, Apr. 6, 1984]

§ 600.510-86 Calculation of average fuel economy.

(a) Average fuel economy will be calculated to the nearest 0.1 mpg for the classes of automobiles identified herein, and the results of such calculations will be reported to the Secretary of Transportation for use in determining compliance with the applicable fuel economy standards.

(1) An average fuel economy calculation will be made for the category of passenger automobiles that is domestically manufactured as defined in § 600.511(d)(1).

(2) An average fuel economy calculation will be made for the category of passenger automobiles that is not domestically manufactured as defined in § 600.511(d)(2).

(3) An average fuel economy calculation will be made for the category of light trucks which is defined in § 600.511(e)(1) and has two-wheel drive.

(4) An average fuel economy calculation will be made for the category of light trucks which is defined in § 600.511(e)(1) and has four-wheel drive.

(5) An average fuel economy calculation will be made for the category of

light trucks which is defined in § 600.511(e)(2) and has two-wheel drive.

(6) An average fuel economy calculation will be made for the category of light trucks which is defined in § 600.511(e)(2) and has four-wheel drive.

(b) For the purpose of calculating average fuel economy under paragraph (c), of this section:

(1) All fuel economy data submitted in accordance with § 600.006(e) or § 600.512(c) shall be used.

(2) The combined city/highway fuel economy will be calculated for each model type in accordance with § 600.207 of this section except that:

(i) Separate fuel economy values will be calculated for model types and base levels associated with car lines that are:

(A) Domestically produced, and

(B) Nondomestically produced and imported;

(ii) Total model year production data, as required by this subpart, will be used instead of sales projections;

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to correct gallons of diesel fuel to equivalent gallons of gasoline;

(iv) The fuel economy value will be rounded to the nearest 0.1 mpg;

(v) At the manufacturer's option, those vehicle configurations that are selfcompensating to altitude changes may be separated by sales into high-altitude sales categories and low-altitude sales categories. These separate sales categories may then be treated (only for the purpose of this section) as separate configurations in accordance with the procedure of paragraph § 600.207(a)(4)(ii), and

(3) The fuel economy value for each vehicle configuration is the combined fuel economy calculated according to § 600.206 except that:

(i) Separate fuel economy values will be calculated for vehicle configurations associated with car lines that are:

(A) Domestically produced, and

(B) Nondomestically produced and imported;

(ii) Total model year production data, as required by this subpart will be used instead of sales projections; and

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to convert gallons of diesel fuel to equivalent gallons of gasoline.

(c) Except as permitted in paragraph (d) of this section, the average fuel economy will be calculated individually for each category identified in § 600.510(a) as follows:

(1) Divide the total production volume of that category of automobiles by

(2) A sum of terms, each of which corresponds to a model type within that category of automobiles and is a fraction determined by dividing

(i) The number of automobiles of that model type produced by the manufacturer in the model year by

(ii) The fuel economy calculated for that model type in accordance with paragraph (b)(2) of this section.

(d) The Administrator may approve alternative calculation methods if they are part of an approved credit plan under the provisions of section 503(b) of U.S.C. 2003(b).

(e) For passenger categories identified in paragraphs (a) (1) and (2) of this section, the average fuel economy calculated in accordance with paragraph (c) of this section shall be adjusted using the following equation:

$$AFE_{adj} = AFE[(0.55 \times a \times c) + (0.45 \times c) + (0.5556 \times a) + 0.4487] / [(0.55 \times a) + 0.45] + 1W$$

Where:

AFE_{adj} =Adjusted average combined fuel economy, rounded to the nearest 0.1 mpg.

AFE =Average combined fuel economy as calculated in paragraph (c) of this section, rounded to the nearest 0.0001 mpg.

a =Sales-weighted average (rounded to the nearest 0.0001 mpg) of all model type highway fuel economy values (rounded to the nearest 0.1 mpg) divided by the sales-weighted average (rounded to the nearest 0.0001 mpg) of all model type city fuel economy values (rounded to the nearest 0.1 mpg). The quotient shall be rounded to 4 decimal places. These average fuel economies shall be determined using the methodology of paragraph (c) of this section.

c =0.0022 for the 1986 model year.

c =A constant value, fixed by model year. For 1987, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available. For 1988 and later model years, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available.

§ 600.510-93

$$IW = (9.2917 \times 10^{-3} \times SF_{3IWC} \times FE_{3IWC}) - (3.5123 \times 10^{-3} \times SF_{4ETW} \times FE_{4IWC})$$

NOTE: Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWC} = The 3000 lb. inertia weight class sales divided by total sales. The quotient shall be rounded to 4 decimal places.

SF_{4ETW} = The 4000 lb. equivalent test weight category sales divided by total sales. The quotient shall be rounded to 4 decimal places.

FE_{3IWC} = The sales-weighted average combined fuel economy of all 3000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

FE_{4IWC} = The sales-weighted average combined fuel economy of all 4000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

(f) The Administration shall calculate and apply additional average fuel economy adjustments if, after notice and opportunity for comment, the Administrator determines that, as a result of test procedure changes not previously considered, such correction is necessary to yield fuel economy test results that are comparable to those obtained under the 1975 test procedures. In making such determinations, the Administrator must find that:

(1) A directional change in measured fuel economy of an average vehicle can be predicted from a revision to the test procedures;

(2) The magnitude of the change in measured fuel economy for any vehicle or fleet of vehicles caused by a revision to the test procedures is quantifiable from theoretical calculations or best available test data;

(3) The impact of a change on average fuel economy is not due to eliminating the ability of manufacturers to take advantage of flexibilities within the existing test procedures to gain measured improvements in fuel economy which are not the result of actual improvements in the fuel economy of production vehicles.

(4) The impact of a change on average fuel economy is not solely due to a greater ability of manufacturers to reflect in average fuel economy those design changes expected to have comparable effect on in-use fuel economy.

(5) The test procedure change is required by EPA or is a change initiated by EPA in its laboratory and is not a

40 CFR Ch. I (7-1-96 Edition)

change implemented solely by a manufacturer in its own laboratory.

[49 FR 13854, Apr. 6, 1984, as amended at 50 FR 27186, July 1, 1985; 51 FR 37851, Oct. 24, 1986]

§ 600.510-93 Calculation of average fuel economy.

(a) Average fuel economy will be calculated to the nearest 0.1 mpg for the classes of automobiles identified in this section, and the results of such calculations will be reported to the Secretary of Transportation for use in determining compliance with the applicable fuel economy standards.

(1) An average fuel economy calculation will be made for the category of passenger automobiles that is domestically manufactured as defined in § 600.511(d)(1).

(2) An average fuel economy calculation will be made for the category of passenger automobiles that is not domestically manufactured as defined in § 600.511(d)(2).

(3) An average fuel economy calculation will be made for the category of light trucks that is domestically manufactured as defined in § 600.511(e)(1).

(4) An average fuel economy calculation will be made for the category of light trucks that is not domestically manufactured as defined in § 600.511(e)(2).

(b) For the purpose of calculating average fuel economy under paragraph (c), of this section:

(1) All fuel economy data submitted in accordance with § 600.006(e) or § 600.502(c) shall be used.

(2) The combined city/highway fuel economy will be calculated for each model type in accordance with § 600.207 of this section except that:

(i) Separate fuel economy values will be calculated for model types and base levels associated with car lines that are:

(A) Domestically produced; and

(B) Nondomestically produced and imported;

(ii) Total model year production data, as required by this subpart, will be used instead of sales projections;

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to correct gallons of

diesel fuel to equivalent gallons of gasoline;

(iv) The fuel economy value will be rounded to the nearest 0.1 mpg; and

(v) At the manufacturer's option, those vehicle configurations that are selfcompensating to altitude changes may be separated by sales into high-altitude sales categories and low-altitude sales categories. These separate sales categories may then be treated (only for the purpose of this section) as separate configurations in accordance with the procedure of paragraph § 600.207(a)(4)(ii).

(3) The fuel economy value for each vehicle configuration is the combined fuel economy calculated according to § 600.206 except that:

(i) Separate fuel economy values will be calculated for vehicle configurations associated with car lines that are:

(A) Domestically produced; and

(B) Nondomestically produced and imported;

(ii) Total model year production data, as required by this subpart will be used instead of sales projections; and

(iii) The fuel economy value of diesel-powered model types will be multiplied by the factor 1.0 to convert gallons of diesel fuel to equivalent gallons of gasoline.

(c) Except as permitted in paragraph (d) of this section, the average fuel economy will be calculated individually for each category identified in paragraph (a) of this section as follows:

(1) Divide the total production volume of that category of automobiles; by

(2) A sum of terms, each of which corresponds to a model type within that category of automobiles and is a fraction determined by dividing:

(i) The number of automobiles of that model type produced by the manufacturer in the model year; by

(ii) For gasoline-fueled and diesel-fueled model types, the fuel economy calculated for that model type in accordance with paragraph (b)(2) of this section; or

(iii) For alcohol-fueled model types, the fuel economy value calculated for that model type in accordance with (b)(2) of this section divided by 0.15 and rounded to the nearest 0.1 mpg; or

(iv) For natural gas-fueled model types, the fuel economy value calculated for that model type in accordance with (b)(2) of this section divided by 0.15 and rounded to the nearest 0.1 mpg; or

(v) For alcohol dual fuel model types, for model years 1993 through 2004, the harmonic average of the following two terms; the result rounded to the nearest 0.1 mpg:

(A) The combined model type fuel economy value for operation on gasoline or diesel fuel as determined in § 600.207(b)(5)(i); and

(B) The combined model type fuel economy value for operation on alcohol fuel as determined in § 600.207(b)(5)(ii) divided by 0.15 provided the requirements of § 600.510 (g) are met; or

(vi) For natural gas dual fuel model types, for model years 1993 through 2004, the harmonic average of the following two terms; the result rounded to the nearest 0.1 mpg:

(A) The combined model type fuel economy value for operation on gasoline or diesel as determined in § 600.207(b)(5)(i); and

(B) The combined model type fuel economy value for operation on natural gas as determined in § 600.207(b)(5)(ii) divided by 0.15 provided the requirements of paragraph (g) of this section are met.

(d) The Administrator may approve alternative calculation methods if they are part of an approved credit plan under the provisions of 15 U.S.C. 2003.

(e) For passenger categories identified in paragraphs (a) (1) and (2) of this section, the average fuel economy calculated in accordance with paragraph (c) of this section shall be adjusted using the following equation:

$$AFE_{adj} = AFE[(0.55 \times a \times c) + (0.45 \times c) + (0.5556 \times a) + 0.4487] / ((0.55 \times a) + 0.45)] + IW$$

Where:

AFE_{adj} = Adjusted average combined fuel economy, rounded to the nearest 0.1 mpg.

AFE = Average combined fuel economy as calculated in paragraph (c) of this section, rounded to the nearest 0.0001 mpg.

a = Sales-weight average (rounded to the nearest 0.0001 mpg) of all model type highway fuel economy values

(rounded to the nearest 0.1 mpg) divided by the sales-weighted average (rounded to the nearest 0.0001 mpg) of all model type city fuel economy values (rounded to the nearest 0.1 mpg). The quotient shall be rounded to 4 decimal places. These average fuel economies shall be determined using the methodology of paragraph (c) of this section.

$c = 0.0022$ for the 1986 model year.

c = A constant value, fixed by model year. For 1987, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available. For 1988 and later model years, the Administrator will specify the c value after the necessary laboratory humidity and test fuel data become available.

$$IW = (9.2917 \times 10^{-3} \times SF_{3IWC} \times FE_{3IWC}) - (3.5123 \times 10^{-3} \times SF_{4ETW} \times FE_{4IWC})$$

NOTE: Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWC} = The 3000 lb. inertia weight class sales divided by total sales. The quotient shall be rounded to 4 decimal places.

SF_{4ETW} = The 4000 lb. equivalent test weight category sales divided by total sales. The quotient shall be rounded to 4 decimal places.

FE_{4IWC} = The sales-weighted average combined fuel economy of all 3000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

FE_{4IWC} = The sales-weighted average combined fuel economy of all 4000 lb. inertia weight class base levels in the compliance category. Round the result to the nearest 0.0001 mpg.

(f) The Administrator shall calculate and apply additional average fuel economy adjustments if, after notice and opportunity for comment, the Administrator determines that, as a result of test procedure changes not previously considered, such correction is necessary to yield fuel economy test results that are comparable to those obtained under the 1975 test procedures. In making such determinations, the Administrator must find that:

(1) A directional change in measured fuel economy of an average vehicle can

be predicted from a revision to the test procedures;

(2) The magnitude of the change in measured fuel economy for any vehicle or fleet of vehicles caused by a revision to the test procedures is quantifiable from theoretical calculations or best available test data;

(3) The impact of a change on average fuel economy is not due to eliminating the ability of manufacturers to take advantage of flexibility within the existing test procedures to gain measured improvements in fuel economy which are not the result of actual improvements in the fuel economy of production vehicles;

(4) The impact of a change on average fuel economy is not solely due to a greater ability of manufacturers to reflect in average fuel economy those design changes expected to have comparable effects on in-use fuel economy;

(5) The test procedure change is required by EPA or is a change initiated by EPA in its laboratory and is not a change implemented solely by a manufacturer in its own laboratory.

(g)(1) Alcohol dual fuel automobiles and natural gas dual fuel automobiles must provide equal or greater energy efficiency while operating on alcohol or natural gas as while operating on gasoline or diesel fuel to obtain the CAFE credit determined in paragraphs (c)(2)(v) and (vi) of this section. The following equation must hold true:

$$E_{alt}/E_{pet} > \text{or} = 1$$

Where:

E_{alt} = $[FE_{alt}/(NHV_{alt} \times D_{alt})] \times 10^6$ = energy efficiency while operating on alternative fuel rounded to the nearest 0.01 miles/million BTU.

E_{pet} = $[FE_{pet}/(NHV_{pet} \times D_{pet})] \times 10^6$ = energy efficiency while operating on gasoline or diesel (petroleum) fuel rounded to the nearest 0.01 miles/million BTU.

FE_{alt} is the fuel economy [miles/gallon for liquid fuels or miles/100 standard cubic feet for gaseous fuels] while operated on the alternative fuel as determined in § 600.113;

FE_{pet} is the fuel economy [miles/gallon] while operated on petroleum fuel (gasoline or diesel) as determined in § 600.113;

NHV_{alt} is the net (lower) heating value [BTU/lb] of the alternative fuel;

Environmental Protection Agency

§ 600.510-93

NHV_{pet} is the net (lower) heating value [BTU/lb] of the petroleum fuel;

D_{alt} is the density [lb/gallon for liquid fuels or lb/100 standard cubic feet for gaseous fuels] of the alternative fuel;

D_{pet} is the density [lb/gallon] of the petroleum fuel.

(i) The equation must hold true for both the city and highway fuel economy values for each test of each test vehicle.

(ii)(A) The net heating value for alcohol fuels shall be determined per ASTM D 240 (Incorporated by reference as specified in § 600.011-93).

(B) The density for alcohol fuels shall be determined per ASTM D 1298 (Incorporated by reference as specified in § 600.011-93).

(iii) The net heating value and density of gasoline are to be determined by the manufacturer in accordance with § 600.113(c).

(2) For model years 1993 through 1995, alcohol dual fuel automobiles designed to operate on mixtures of alcohol and gasoline must, in addition to paragraph (g)(1) of this section, to obtain the CAFE credit determined in paragraphs (c)(2)(v) and (vi) of this section, provide equal or superior energy efficiency while operating on a mixture of 50% alcohol, 50% gasoline by volume, as while operating on gasoline fuel. The following equation must hold true:

$$E_{50}/E_g > \text{or} = 1$$

Where:

$E_{50} = [FE_{50}/(NHV_{50} \times D_{50})] \times 10^6$ = energy efficiency while operating on 50% alcohol, 50% gasoline rounded to the nearest 0.01 miles/million BTU.

$E_g = [FE_g/(NHV_g \times D_g)] \times 10^6$ = energy efficiency while operating on gasoline fuel rounded to the nearest 0.01 miles/million BTU.

FE_{50} is the fuel economy [miles/gallon] while operated on 50% alcohol, 50% gasoline as determined in § 600.113;

FE_g is the fuel economy [miles/gallon] while operated on gasoline as determined in § 600.113;

NHV_{50} is the net (lower) heating value [BTU/lb] of the 50/50 blend;

NHV_g is the net (lower) heating value [BTU/lb] of gasoline;

D_{50} is the density [lb/gallon] of the 50/50 blend;

D_g is the density [lb/gallon] of the gasoline.

(i) To demonstrate that the equation holds true for each engine family, the manufacturer will:

(A) Test one test vehicle in each engine family on both the city and highway cycles; or

(B) In lieu of testing, provide a written statement attesting that equal or superior energy efficiency is attained while using a 50% alcohol, 50% gasoline mixture compared to using 100% gasoline.

(ii)(A) The net heating value for the 50% alcohol, 50% gasoline mixture shall be determined by ASTM D 240 (Incorporated by reference as specified in § 600.011-93).

(B) The density for the 50% alcohol, 50% gasoline mixture shall be determined per ASTM D 1298 (Incorporated by reference as specified in § 600.011-93).

(iii) The net heating value and density of gasoline are to be determined by the manufacturer in accordance with § 600.113(c).

(3) Alcohol dual fuel passenger automobiles and natural gas dual fuel passenger automobiles manufactured during model years 1993 through 2004 must meet the minimum driving range requirements established by the Secretary of Transportation (49 CFR part 538) to obtain the CAFE credit determined in paragraphs (c)(2)(v) and (vi) of this section.

(h) For each of the model years 1993 through 2004, and for each category of automobile identified in paragraph (a) of this section, the maximum increase in average fuel economy determined in paragraph (c) of this section attributable to alcohol dual fuel automobiles and natural gas dual fuel automobiles shall be 1.2 miles per gallon or as provided for in paragraph (i) of this section.

(1) The Administrator shall calculate the increase in average fuel economy to determine if the maximum increase provided in paragraph (h) of this section has been reached. The Administrator shall calculate the average fuel economy for each category of automobiles specified in paragraph (a) of this section by subtracting the average fuel economy values calculated in accordance with this section by assuming

all alcohol dual fuel and natural gas dual fuel automobiles are operated exclusively on gasoline (or diesel) fuel from the average fuel economy values determined in paragraphs (b)(2)(vi), (b)(2)(vii), and (c) of this section. The difference is limited to the maximum increase specified in paragraph (h) of this section.

(2) [Reserved]

(i) In the event that the Secretary of Transportation lowers the corporate average fuel economy standard applicable to passenger automobiles below 27.5 miles per gallon for any model year during 1993 through 2004, the maximum increase of 1.2 mpg per year specified in paragraph (h) of this section shall be reduced by the amount the standard was lowered, but not reduced below 0.7 mpg per year.

[59 FR 39659, Aug. 3, 1994]

EFFECTIVE DATE NOTE: At 59 FR 39659, Aug. 3, 1994, § 600.510-93 was added. This section contains information collection and record-keeping requirements and will not become effective until approval has been given by the Office of Management and Budget.

§ 600.511-80 Determination of domestic production.

(a) An automobile shall be considered domestically produced in any model year if it is included within a domestically produced car line (car line includes station wagons for purposes of this paragraph), unless the assembly of such automobile is completed in Canada or Mexico and such automobile is not imported into the United States prior to the expiration of 30 days following the end of the model year. For purposes of this paragraph a car line will be considered domestically produced if the following ratio is less than 0.25:

(1) The sum of the declared value, as defined in § 600.502, of all of the imported components installed or included on automobiles produced within such a car line within a given model year plus the cost of transportation and insuring such components to the United States port of entry, the Mexican port of entry (when paragraph (b)(3) of this section applies), or the Canadian port of entry but exclusive of any customs duty, divided by

(2) The cost of production, as defined in § 600.502, of automobiles within such car line.

(b) For the purposes of calculations under this subpart with respect to automobiles manufactured during any model year,

(1) An average exchange rate for the country of origin of each imported component shall be used that is calculated by taking the mean of the exchange rates in effect at the end of each quarter set by the Federal Reserve Bank of New York for twelve calendar quarters prior to and including the calendar quarter ending one year prior to the date that the manufacturer submits the calculation of the preliminary average for such model year. Such rate, once calculated, shall be in effect for the duration of the model year. Upon petition of a manufacturer, the Administrator may permit the use of a different exchange rate where appropriate and necessary.

(2) For automobiles for which paragraph (b)(3) of this section does not apply pursuant to the schedule in paragraph (b)(4), components shall be considered imported unless they are either:

(i) Wholly the growth, product, or manufacture of the United States and/or Canada, or

(ii) Substantially transformed in the United States or Canada into a new and different article of commerce.

(3) For automobiles for which this paragraph applies pursuant to the schedule in paragraph (b)(4) of this section, components shall be considered imported unless they are either:

(i) Wholly the growth, product, or manufacture of the United States and/or Canada and/or Mexico, or

(ii) Substantially transformed in the United States and/or Canada and/or Mexico into a new and different article of commerce.

(4) Paragraphs (b)(4) (i) through (v) of this section set forth the schedule according to which paragraph (b)(3) of this section applies for all automobiles manufactured by a manufacturer and sold in the United States, wherever assembled.

(i) With respect to a manufacturer that initiated the assembly of automobiles in Mexico before model year

1992, the manufacturer may elect, at any time between January 1, 1997, and January 1, 2004, to have paragraph (b)(3) of this section apply to all automobiles it manufactures, beginning with the model year commencing after the date of such election.

(ii) With respect to a manufacturer initiating the assembly of automobiles in Mexico after model year 1991, paragraph (b)(3) of this section shall apply to all automobiles it manufactures, beginning with the model year commencing after January 1, 1994, or the model year commencing after the date that the manufacturer initiates the assembly of automobiles in Mexico, whichever is later.

(iii) With respect to a manufacturer not described by paragraph (b)(4) (i) or (ii) of this section assembling automobiles in the United States or Canada but not in Mexico, the manufacturer may elect, at any time between January 1, 1997, and January 1, 2004, to have paragraph (b)(3) of this section apply to all automobiles it manufactures, beginning with the model year commencing after the date of such election, except that if such manufacturer initiates the assembly of automobiles in Mexico before making such election, this paragraph shall not apply, and the manufacturer shall be subject to paragraph (b)(4)(ii) of this section.

(iv) With respect to a manufacturer not assembling automobiles in the United States, Canada, or Mexico, paragraph (b)(3) of this section shall apply to all automobiles it manufactures, beginning with the model year commencing after January 1, 1994.

(v) With respect to a manufacturer authorized to make an election under paragraph (b)(4) (i) or (iii) of this section which has not made that election within the specified period, paragraph (b)(3) of this section shall apply to all automobiles it manufactures, beginning with the model year commencing after January 1, 2004.

(5) All elections under paragraph (b)(4) of this section shall be made in accordance with the procedures established by the Secretary of Transportation pursuant to 15 U.S.C. 2003(b)(2)(G)(iii).

(c) If it is determined by the Administrator at some date later than the

date of entry that the declared value of such imported components did not represent fair market value at the date of entry, through U.S. Bureau of Customs appraisals, the Administrator may review the determination made pursuant to paragraph (a) of this section as to whether the pertinent car lines which utilize such components were correctly included within the manufacturer's domestically-produced or foreign-produced fleets. If such a determination was in error due to misrepresentation of the valuation of imported components at the date of entry, the Administrator may recalculate the manufacturer's average for the affected model year, according to § 600.510, to reflect the correct valuation of such imported components in each affected car line.

(d) In calculating average fuel economy under § 600.510(c), the Administrator will separate the total number of passenger automobiles produced by a manufacturer into the following two categories:

(1) Passenger automobiles which are domestically produced by the manufacturer.

(2) Passenger automobiles which are not domestically produced and which are imported by the manufacturer.

(e) In calculating average fuel economy under § 600.510(c), the Administrator will separate the total number of light trucks produced by a manufacturer into the following two categories:

(1) Light trucks which are domestically produced by the manufacturer.

(2) Light trucks which are not domestically produced and which are imported by the manufacturer.

[42 FR 45662, Sept. 12, 1977, as amended at 43 FR 39376, Sept. 5, 1978; 59 FR 679, Jan. 6, 1994; 59 FR 33914, July 1, 1994]

§ 600.512-86 Model year report.

(a) For each model year, the manufacturer shall submit to the Administrator a report, known as the model year report, containing all information necessary for the calculation of the manufacturer's average fuel economy.

(b)(1) The model year report shall be in writing, signed by the authorized representative of the manufacturer and shall be submitted no later than 60 days after the report required in

§ 86.082-37 for the final production quarter.

(2) The Administrator may waive the requirement that the model year report be submitted within 60 days after the final quarterly production report. Based upon a request by the manufacturer, if the Administrator determines that 60 days is insufficient time for the manufacturer to provide all additional data required as determined in § 600.507, the Administrator shall establish a date by which the model year report must be submitted.

(3) Separate reports shall be submitted for passenger automobiles and light trucks (as identified in § 600.510).

(c) The model year report must include the following information:

(1) All fuel economy data used in the labeling calculations and subsequently required by the Administrator in accordance with § 600.507.

(2) All fuel economy data for certification vehicles and for vehicles tested for running changes approved under §§ 86.079-32, 86.079-33, and 86.082-34.

(3) Any additional fuel economy data submitted by the manufacturer under § 600.509.

(4) A fuel economy value for each model type of the manufacturer's product line calculated according to § 600.510(b)(2).

(5) The manufacturer's average fuel economy value calculated according to § 600.510(c).

(6) A listing of both domestically and nondomestically produced car lines as determined in § 600.511 and the cost information upon which the determination was made.

(7) The authenticity and accuracy of production data must be attested to by the corporation, and shall bear the signature of an officer (a corporate executive of at least the rank of vice-president) designated by the corporation. Such attestation shall constitute a representation by the manufacturer that the manufacturer has established reasonable, prudent procedures to ascertain and provide production data that are accurate and authentic in all material respects and that these procedures have been followed by employees of the manufacturer involved in the reporting process. The signature of the designated officer shall constitute a rep-

resentation by the required attestation.

[49 FR 13855, Apr. 6, 1984]

§ 600.513-81 Gas Guzzler Tax.

(a)(1) The provisions of this section do not apply to passenger automobiles exempted from Gas Guzzler Tax assessments by the Energy Tax Act of 1978 and regulations promulgated thereunder by the Internal Revenue Service. *However*, the manufacturer of an exempted passenger automobile may, in his discretion, label such vehicles in accordance with the provisions of this section.

(2) Vehicles produced by a manufacturer that has been granted an alternate tax rate schedule by the Secretary of the Treasury shall be labeled with the applicable tax determined under any such alternate tax schedule.

(3) For 1980 and later model year passenger automobiles, the combined general label model type fuel economy value used for Gas Guzzler Tax assessments shall be calculated in accordance with the following equation, rounded to the nearest 0.1 mpg:

$$FE_{adj} = FE \left[\frac{((0.55 \times a_g \times c) + (0.45 \times c) + (0.5556 \times a_g) + 0.4487)}{((0.55 \times a_g) + 0.45)} \right] + IW_g$$

Where:

FE_{adj} = Fuel economy value to be used for determination of gas guzzler tax assessment rounded to the nearest 0.1 mpg.

FE = Combined model type fuel economy calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg.

a_g = Model type highway fuel economy, calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg divided by the model type city fuel economy calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg. The quotient shall be rounded to 4 decimal places.

$c = 2.501 \times 10^{-2}$ for the 1980 model year
 $c = 2.184 \times 10^{-2}$ for the 1981 model year
 $c = 9.260 \times 10^{-3}$ for the 1982 model year
 $c = 1.435 \times 10^{-2}$ for the 1983 model year
 $c = 1.420 \times 10^{-2}$ for the 1984 model year
 $c = 1.490 \times 10^{-2}$ for the 1985 model year
 $c = 1.300 \times 10^{-3}$ for the 1986 and later model years

$$IW_g = (9.2917 \times 10^{-3} \times SF_{3IWC} \times FE_{3IWC}) - (3.5123 \times 10^{-3} \times SF_{4ETWG} \times FE_{4IWC})$$

NOTE.—Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWC}=The 3000 lb. inertia weight class sales in the model type divided by the total model type sales. The quotient shall be rounded to 4 decimal places.

SF_{4ETWG}=The 4000 lb. equivalent test weight sales in the model type divided by the total model type sales, the quotient shall be rounded to 4 decimal places.

FE_{3IWC}=The 3000 lb. inertia weight class base level combined fuel economy used to calculate the model type fuel economy rounded to the nearest 0.0001 mpg.

FE_{4IWC}=The 4000 lb. inertia weight class base level combined fuel economy used to calculate the model type fuel economy rounded to the nearest 0.0001 mpg.

(b) *This paragraph applies to 1981 model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 17.0 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 17.0 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 16.0 mpg, but less than 17.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$200.

(iii) At least 15.0 mpg, but less than 16.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$350.

(iv) At least 14.0 mpg, but less than 15.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$450.

(v) At least 13.0 mpg, but less than 14.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$550.

(vi) Less than 13.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$650.

(c) *This paragraph applies to 1982 model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 18.5 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 18.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$200.

(iii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$350.

(iv) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$450.

(v) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$600.

(vi) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$750.

(vii) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$950.

(viii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,200.

(d) *This paragraph applies to 1983 model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 19.0 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 19.0 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 18.0 mpg, but less than 19.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$350.

(iii) At least 17.0 mpg, but less than 18.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$500.

(iv) At least 16.0 mpg, but less than 17.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$650.

(v) At least 15.0 mpg, but less than 16.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$800.

(vi) At least 14.0 mpg, but less than 15.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,000.

(vii) At least 13.0 mpg, but less than 14.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,250.

(viii) Less than 13.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,550.

(e) *This paragraph applies to 1984 model year vehicles.* (1) Passengers automobiles with a combined general label model type fuel economy value of less than 19.5 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 19.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 18.5 mpg, but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$450.

(iii) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$600.

(iv) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$750.

(v) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$950.

(vi) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,150.

(vii) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,450.

(viii) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,750.

(ix) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$2,150.

(f) *This paragraph applies to 1985 model year vehicles.* (1) Passengers automobiles with a combined general label model type fuel economy value of less than 21.0 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 21.0 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 20.0 mpg, but less than 21.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$500.

(iii) At least 19.0 mpg, but less than 20.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$600.

(iv) At least 18.0 mpg, but less than 19.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$800.

(v) At least 17.0 mpg, but less than 18.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,000.

(vi) At least 16.0 mpg, but less than 17.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,200.

(vii) At least 15.0 mpg, but less than 16.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,500.

(viii) At least 14.0 mpg, but less than 15.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,800.

(ix) At least 13.0 mpg, but less than 14.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$2,200.

(x) Less than 13.0 mpg, the Gas Guzzler Tax statement shall show a tax of \$2,650.

(g) *This paragraph applies to 1986 and later model year vehicles.* (1) Passenger automobiles with a combined general label model type fuel economy value of less than 22.5 mpg, calculated in accordance with paragraph (a)(3) of this section and rounded to the nearest 0.1 mpg, shall carry a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 22.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 21.5 mpg, but less than 22.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$500.

(iii) At least 20.5 mpg, but less than 21.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$650.

(iv) At least 19.5 mpg, but less than 20.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$850.

(v) At least 18.5 mpg, but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,050.

(vi) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,300.

(vii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,500.

Environmental Protection Agency

§ 600.513-91

(viii) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,850.

(ix) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$2,250.

(x) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$2,700.

(xi) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$3,200.

(xii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$3,850.

(Title V of the Motor Vehicle Information and Cost Savings Act, 15 U.S.C. 2001 *et. seq.*, as amended by sec. 403 of the National Energy Conservation Policy Act, Pub. L. 95-619, 92 Stat. 3256)

[45 FR 51165, July 31, 1980, as amended at 50 FR 27187, July 1, 1985]

§ 600.513-91 Gas Guzzler Tax.

(a) This section applies only to passenger automobiles sold after December 27, 1991, regardless of the model year of those vehicles. For alcohol dual fuel and natural gas dual fuel automobiles, the fuel economy while such automobiles are operated on gasoline will be used for Gas Guzzler Tax assessments.

(1) The provisions of this section do not apply to passenger automobiles exempted for Gas Guzzler Tax assessments by applicable federal law and regulations. However, the manufacturer of an exempted passenger automobile may, in its discretion, label such vehicles in accordance with the provisions of this section.

(2) For 1991 and later model year passenger automobiles, the combined general label model type fuel economy value used for Gas Guzzler Tax assessments shall be calculated in accordance with the following equation, rounded to the nearest 0.1 mpg:

$$FE_{adj} = FE [(0.55 \times a_g \times c) + (0.45 \times c) + (0.5556 \times a_g) + 0.4487] / ((0.55 \times a_g) + 0.45) + IW_g$$

Where:

FE_{adj} = Fuel economy value to be used for determination of gas guzzler tax assessment rounded to the nearest 0.1 mpg.

FE = Combined model type fuel economy calculated in accordance with

§ 600.207, rounded to the nearest 0.0001 mpg.

a_g = Model type highway fuel economy, calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg divided by the model type city fuel economy calculated in accordance with § 600.207, rounded to the nearest 0.0001 mpg. The quotient shall be rounded to 4 decimal places.

c = gas guzzler adjustment factor = 1.300×10^{-3} for the 1986 and later model years.

$$IW_g = (9.2917 \times 10^{-3} \times SF_{3IWC} FE_{3IWC}) - (3.5123 \times 10^{-3} \times SF_{4ETWG} FE_{4IWC})$$

NOTE: Any calculated value of IW less than zero shall be set equal to zero.

SF_{3IWC} = The 3000 lb. inertia weight class sales in the model type divided by the total model type sales; the quotient shall be rounded to 4 decimal places.

SF_{4ETWG} = The 4000 lb. equivalent test weight sales in the model type divided by the total model type sales; the quotient shall be rounded to 4 decimal places.

FE_{3IWC} = The 3000 lb. inertial weight class base level combined fuel economy used to calculate the model type fuel economy rounded to the nearest 0.0001 mpg.

FE_{4IWC} = The 4000 lb. inertial weight class base level combined fuel economy used to calculate the model type fuel economy f rounded to the nearest 0.001 mpg.

(b)(1) For passenger automobiles sold after December 31, 1990, with a combined general label model type fuel economy value of less than 22.5 mpg, calculated in accordance with paragraph (a)(2) of this section and rounded to the nearest 0.1 mpg, each vehicle fuel economy label shall include a Gas Guzzler Tax statement pursuant to section 403 of the National Energy Conservation Policy Act. The tax amount stated shall be as specified in paragraph (b)(2) of this section.

(2) For passenger automobiles with a combined general label model type fuel economy value of:

(i) At least 22.5 mpg, no Gas Guzzler Tax statement is required.

(ii) At least 21.5 mpg, but less than 22.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,000.

(iii) At least 20.5 mpg, but less than 21.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,300.

(iv) At least 19.5 mpg, but less than 20.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$1,700.

(v) At least 18.5 mpg; but less than 19.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$2,100.

(vi) At least 17.5 mpg, but less than 18.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$2,600.

(vii) At least 16.5 mpg, but less than 17.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$3,000.

(viii) At least 15.5 mpg, but less than 16.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$3,700.

(ix) At least 14.5 mpg, but less than 15.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$4,500.

(x) At least 13.5 mpg, but less than 14.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$5,400.

(xi) At least 12.5 mpg, but less than 13.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$6,400.

(xii) Less than 12.5 mpg, the Gas Guzzler Tax statement shall show a tax of \$7,700.

[56 FR 55465, Oct. 28, 1991, as amended at 59 FR 39661, Aug. 3, 1994]

APPENDIX I TO PART 600—HIGHWAY FUEL ECONOMY DRIVING SCHEDULE (APPLICABLE TO 1978 AND LATER MODEL YEAR AUTOMOBILES)

[SPEED (MPH) VS TIME (SEC)]

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
0	Sample On	50	38.6	100	48.5	150	44.1	200	43.4	250	48.0	300	33.4	350	59.0
1	0.0	51	39.3	101	48.8	151	44.3	201	43.2	251	48.0	301	35.6	351	58.9
2	0.0	52	40.0	102	49.1	152	44.4	202	43.2	252	48.0	302	37.5	352	58.8
3	2.0	53	40.7	103	49.2	153	44.6	203	43.1	253	48.1	303	39.1	353	58.6
4	4.9	54	41.4	104	49.1	154	44.7	204	43.0	254	48.2	304	40.2	354	58.4
5	8.1	55	42.2	105	49.1	155	44.9	205	43.0	255	48.2	305	41.1	355	58.2
6	11.3	56	42.9	106	49.0	156	45.2	206	43.1	256	48.1	306	41.8	356	58.1
7	14.5	57	43.5	107	49.0	157	45.7	207	43.4	257	48.6	307	42.4	357	58.0
8	17.3	58	44.0	108	49.1	158	45.9	208	43.9	258	48.9	308	42.8	358	57.9
9	19.6	59	44.3	109	49.2	159	46.3	209	44.0	259	49.1	309	43.3	359	57.6
10	21.8	60	44.5	110	49.3	160	46.8	210	43.5	260	49.1	310	43.8	360	57.4
11	24.0	61	44.8	111	49.4	161	46.9	211	42.6	261	49.1	311	44.3	361	57.2
12	25.8	62	44.9	112	49.5	162	47.0	212	41.5	262	49.1	312	44.7	362	57.1
13	27.1	63	45.0	113	49.5	163	47.1	213	40.7	263	49.1	313	45.0	363	57.0
14	28.0	64	45.1	114	49.5	164	47.6	214	40.0	264	49.0	314	45.2	364	57.0
15	29.0	65	45.4	115	49.4	165	47.9	215	40.0	265	48.9	315	45.4	365	56.9
16	30.0	66	45.7	116	49.1	166	48.0	216	40.3	266	48.2	316	45.5	366	56.9
17	30.7	67	46.0	117	48.9	167	48.0	217	41.0	267	47.7	317	45.8	367	56.9
18	31.5	68	46.3	118	48.6	168	47.9	218	42.0	268	47.5	318	46.0	368	57.0
19	32.2	69	46.5	119	48.4	169	47.8	219	42.7	269	47.2	319	46.1	369	57.0
20	32.9	70	46.8	120	48.1	170	47.3	220	43.1	270	46.7	320	46.5	370	57.0
21	33.5	71	46.9	121	47.7	171	46.7	221	43.2	271	46.2	321	46.8	371	57.0
22	34.1	72	47.0	122	47.4	172	46.2	222	43.4	272	46.0	322	47.1	372	57.0
23	34.6	73	47.1	123	47.3	173	45.9	223	43.9	273	45.8	323	47.7	373	57.0
24	34.9	74	47.2	124	47.5	174	45.7	224	44.3	274	45.6	324	48.3	374	57.0
25	35.1	75	47.3	125	47.8	175	45.5	225	44.7	275	45.4	325	49.0	375	57.0
26	35.7	76	47.2	126	47.9	176	45.4	226	45.1	276	45.2	326	49.7	376	57.0
27	35.9	77	47.1	127	48.0	177	45.3	227	45.4	277	45.0	327	50.3	377	56.9
28	35.8	78	47.0	128	47.9	178	45.0	228	45.8	278	44.7	328	51.0	378	56.8
29	35.3	79	46.9	129	47.9	179	44.0	229	46.5	279	44.5	329	51.7	379	56.5
30	34.9	80	46.9	130	47.9	180	43.1	230	46.9	280	44.2	330	52.4	380	56.2
31	34.5	81	46.9	131	48.0	181	42.2	231	47.2	281	43.5	331	53.1	381	56.0
32	34.6	82	47.0	132	48.0	182	41.5	232	47.4	282	42.8	332	53.8	382	56.0
33	34.8	83	47.1	133	48.0	183	41.5	233	47.3	283	42.0	333	54.5	383	56.0
34	35.1	84	47.1	134	47.9	184	42.1	234	47.3	284	40.1	334	55.2	384	56.1
35	35.7	85	47.2	135	47.3	185	42.9	235	47.2	285	38.6	335	55.8	385	56.4
36	36.1	86	47.1	136	46.0	186	43.5	236	47.2	286	37.5	336	56.4	386	56.7
37	36.2	87	47.0	137	43.3	187	43.9	237	47.2	287	35.8	337	56.9	387	56.9
38	36.5	88	46.9	138	41.2	188	43.6	238	47.1	288	34.7	338	57.0	388	57.1
39	36.7	89	46.5	139	39.5	189	43.3	239	47.0	289	34.0	339	57.1	389	57.3
40	36.9	90	46.3	140	39.2	190	43.0	240	47.0	290	33.3	340	57.3	390	57.4
41	37.0	91	46.2	141	39.0	191	43.1	241	46.9	291	32.5	341	57.6	391	57.4
42	37.0	92	46.3	142	39.0	192	43.4	242	46.8	292	31.7	342	57.8	392	57.2
43	37.0	93	46.5	143	39.1	193	43.9	243	46.9	293	30.6	343	58.0	393	57.0
44	37.0	94	46.9	144	39.5	194	44.3	244	47.0	294	29.6	344	58.1	394	56.9
45	37.0	95	47.1	145	40.1	195	44.6	245	47.2	295	28.8	345	58.4	395	56.6

Environmental Protection Agency

Pt. 600, App. II

APPENDIX I TO PART 600—HIGHWAY FUEL ECONOMY DRIVING SCHEDULE (APPLICABLE TO 1978 AND LATER MODEL YEAR AUTOMOBILES)—Continued

[SPEED (MPH) VS TIME (SEC)]

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
46	37.0	96	47.4	146	41.0	196	44.9	246	47.5	296	28.4	346	58.7	396	56.3
47	37.1	97	47.7	147	42.0	197	44.8	247	47.9	297	28.6	347	58.8	397	56.1
48	37.3	98	48.0	148	43.1	198	44.4	248	48.0	298	29.5	348	58.9	398	56.4
49	37.8	99	48.2	149	43.7	199	43.9	249	48.0	299	31.4	349	59.0	399	56.7

SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH	SEC	MPH
400	57.1	450	58.2	500	54.7	550	55.8	600	48.3	650	50.2	700	54.2	750	26.8
401	57.5	451	58.1	501	54.6	551	55.6	601	48.0	651	50.7	701	54.5	751	24.5
402	57.8	452	58.0	502	54.4	552	55.4	602	47.9	652	51.1	702	54.8	752	21.5
403	58.0	453	58.0	503	54.3	553	55.2	603	47.8	653	51.7	703	55.0	753	19.5
404	58.0	454	58.0	504	54.3	554	55.1	604	47.7	654	52.2	704	55.5	754	17.4
405	58.0	455	58.0	505	54.2	555	55.0	605	47.9	655	52.5	705	55.9	755	15.1
406	58.0	456	58.0	506	54.1	556	54.9	606	48.3	656	52.1	706	56.1	756	12.4
407	58.0	457	58.0	507	54.1	557	54.6	607	49.0	657	51.6	707	56.3	757	9.7
408	58.0	458	57.9	508	54.1	558	54.4	608	49.1	658	51.1	708	56.4	758	7.0
409	57.9	459	57.9	509	54.0	559	54.2	609	49.0	659	51.0	709	56.5	759	5.0
410	57.8	460	58.0	510	54.0	560	54.1	610	48.9	660	51.0	710	56.7	760	3.3
411	57.7	461	58.1	511	54.0	561	53.8	611	48.0	661	51.1	711	56.9	761	2.0
412	57.7	462	58.1	512	54.0	562	53.4	612	47.1	662	51.4	712	57.0	762	0.7
413	57.8	463	58.2	513	54.0	563	53.3	613	46.2	663	51.7	713	57.3	763	0.0
414	57.9	464	58.3	514	54.0	564	53.1	614	46.1	664	52.0	714	57.7	764	0.0
415	58.0	465	58.3	515	54.0	565	52.9	615	46.1	665	52.2	715	58.2	765	Sample Off
416	58.1	446	58.3	516	54.0	566	52.6	616	46.2	666	52.5	716	58.8		
417	58.4	467	58.2	517	54.1	567	52.4	617	46.9	667	52.8	717	59.1		
418	58.9	468	58.1	518	54.2	568	52.2	618	47.8	668	52.7	718	59.2		
419	59.1	469	58.0	519	54.5	569	52.1	619	49.0	669	52.6	719	59.1		
420	59.4	470	57.8	520	54.8	570	52.0	620	49.7	670	52.3	720	58.8		
421	59.8	471	57.5	521	54.9	571	52.0	621	50.6	671	52.3	721	58.5		
422	59.9	472	57.1	522	55.0	572	52.0	622	51.5	672	52.4	722	58.1		
423	59.9	473	57.0	523	55.1	573	52.0	623	52.2	673	52.5	723	57.7		
424	59.8	474	56.6	524	55.2	574	52.1	624	52.7	674	52.7	724	57.3		
425	59.6	475	56.1	525	55.2	575	52.0	625	53.0	675	52.7	725	57.1		
426	59.4	476	56.0	526	55.3	576	52.0	626	53.6	676	52.4	726	56.8		
427	59.2	477	55.8	527	55.4	577	51.9	627	54.0	677	52.1	727	56.5		
428	59.1	478	55.5	528	55.5	578	51.6	628	54.1	678	51.7	728	56.2		
429	59.0	479	55.2	529	55.6	579	51.4	629	54.4	679	51.1	729	55.5		
430	58.9	480	55.1	530	55.7	580	51.1	630	54.7	680	50.5	730	54.6		
431	58.7	481	55.0	531	55.8	581	50.7	631	55.1	681	50.1	731	54.1		
432	58.6	482	54.9	532	55.9	582	50.3	632	55.4	682	49.8	732	53.7		
433	58.5	483	54.9	533	56.0	583	49.8	633	55.4	683	49.7	733	53.2		
434	58.4	484	54.9	534	56.0	584	49.3	634	55.0	684	49.6	734	52.9		
435	58.4	485	54.9	535	56.0	585	48.7	635	54.5	685	49.5	735	52.5		
436	58.3	486	54.9	536	56.0	586	48.2	636	53.6	686	49.5	736	52.0		
437	58.2	487	54.9	537	56.0	587	48.1	637	52.5	687	49.7	737	51.3		
438	58.1	488	55.0	538	56.0	588	48.0	638	50.2	688	50.0	738	50.5		
439	58.0	489	55.0	539	56.0	589	48.0	639	48.2	689	50.2	739	49.5		
440	57.9	490	55.0	540	56.0	590	48.1	640	46.5	690	50.6	740	48.5		
441	57.9	491	55.0	541	56.0	591	48.4	641	46.2	691	51.1	741	47.6		
442	57.9	492	55.0	542	56.0	592	48.9	642	46.0	692	51.6	742	46.8		
443	57.9	493	55.0	543	56.0	593	49.0	643	46.0	693	51.9	743	45.6		
444	57.9	494	55.1	544	56.0	594	49.1	644	46.3	694	52.0	744	44.2		
445	58.0	495	55.1	545	56.0	595	49.1	645	46.8	695	52.1	745	42.5		
446	58.1	496	55.0	546	56.0	596	49.0	646	47.5	696	52.4	746	39.2		
447	58.1	497	54.9	547	55.9	597	49.0	647	48.2	697	52.9	747	35.9		
448	58.2	498	54.9	548	55.9	598	48.9	648	48.8	698	53.3	748	32.6		
449	58.2	499	54.8	549	55.9	599	48.6	649	49.5	699	53.7	749	29.3		

[42 FR 45667, Sept. 12, 1977]

APPENDIX II TO PART 600—SAMPLE FUEL ECONOMY CALCULATIONS

(a) This sample fuel economy calculation is applicable to 1978 through 1987 model year automobiles.

Pt. 600, App. II

40 CFR Ch. I (7-1-96 Edition)

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

HC=.139 grams/mile
CO=1.59 grams/mile
CO₂=317 grams/mile

According to the procedure in §600.113-78, the city fuel economy or MPG_c, for the vehicle may be calculated by substituting the HC, CO, and CO₂ grams/mile values into the following equation.

$$\text{MPG}_c = \frac{2421}{(0.866 \times \text{HC}) + (0.429 \times \text{CO}) + (0.273 \times \text{CO}_2)}$$

$$\text{MPG}_c = \frac{2421}{(0.866 \times 1.39) + (0.429 \times 1.59) + (0.273 \times 317)}$$

MPG_c=27.7

(2) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and calculation similar to that shown in paragraph (a) by this appendix

resulted in a highway fuel economy or MPG_h of 36.9. According to the procedure in §600.113, the combined fuel economy (called MPG_{c/h}) for the vehicle may be calculated by substituting the city and highway fuel economy values into the following equation:

$$\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{\text{MPG}_c} + \frac{0.45}{\text{MPG}_h}}$$

$$\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{27.7} + \frac{0.45}{36.9}}$$

MPG_{c/h} = 31.2

(b) This sample fuel economy calculation is applicable to 1988 and later model year automobiles.

(1) Assume that a gasoline-fueled vehicle was tested by the Federal Emission Test Procedure and the following results were calculated:

HC=.139 grams/mile
CO=1.59 grams/mile
CO₂=317 grams/mile

(2) Assume that the test fuel used for this test had the following properties:

SG=0.745
CWF=0.868
NHV=18,478 Btu/lb.

(3) According to the procedure in §600.113-88, the city fuel economy or MPG_c, for the vehicle may be calculated by substituting

the HC, CO, and CO₂ gram/mile values and the SG, CWF, and NHV values into the following equation:

$$\text{MPG}_c = (5174 \times 10^4 \times \text{CWF} \times \text{SG}) / [((\text{CWF} \times \text{HC}) + (0.429 \times \text{CO} + (0.273 \times \text{CO}_2)) (0.6 \times \text{SG} \times \text{NHV}) + 5471)]$$

$$\text{MPG}_c = (5174 \times 10^4 \times 0.868 \times 0.745) / [(0.868 \times .139 + 0.429 \times 1.59 + 0.273 \times 317) (0.6 \times 0.745 \times 18478 + 5471)]$$

MPG_c=27.9

(4) Assume that the same vehicle was tested by the Federal Highway Fuel Economy Test Procedure and a calculation similar to that shown in (b)(3) resulted in a highway fuel economy of MPG_h of 36.9. According to the procedure in §600.113, the combined fuel economy (called MPG_{c/h}) for the vehicle may be calculated by substituting the city and

Environmental Protection Agency

Pt. 600, App. III

highway fuel economy values into the following equation:

$$\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{\text{MPG}_c} + \frac{0.45}{\text{MPG}_h}}$$

$$\text{MPG}_{c/h} = \frac{1}{\frac{0.55}{27.9} + \frac{0.45}{36.9}}$$

$$\text{MPG}_{c/h} = 31.3$$

[51 FR 37852, Oct. 24, 1986]

APPENDIX III TO PART 600—SAMPLE FUEL ECONOMY LABEL CALCULATION (1977 MODEL YEAR)

Suppose that a manufacturer called Mizer Motors has a product line composed of eight car lines. Of these eight, four are available with the 300 CID, 2 barrel, non-catalyst, 49-state engine. These four car lines are:

Ajax
Boredom III
Dodo
Castor (Station Wagon)

A car line is defined in subpart A as a group of vehicles within a make or division which has a degree of commonality in construction. Car line does not consider any level of decor or opulence and is not generally distinguished by such characteristics as roofline, number of doors, seats, or windows. Station wagons and light duty trucks are, however, identified separately from the

remainder of each car line. In other words, a Castor station wagon would be considered a different car line than the normal Castor car line made up of sedans, coupes, etc.

The engine considered here is defined as a basic engine in subpart A of this part. A basic engine is a unique combination of fuel system, number of cylinders, catalyst usage, and engine displacement.

A model type is a unique combination of car line, basic engine, and transmission class. Thus Ajax is a car line but Ajax 300-2V noncatalyst, 49-state, manual transmission is a model type whereas Ajax 300-2V non-catalyst, 49-state, automatic transmission is a different model type.

The following calculations provide an example of the procedures described in subpart C of this part for the calculation of vehicle configuration and model type fuel economy values. In order to simplify the presentation, only city fuel economy values are included. The procedure is identical for highway and combined fuel economy values.

Step I. *Input data as supplied by the manufacturer or as determined from testing conducted by the Administrator.*

Manufacturer—Mizer Motors.

Basic Engine: (300-2 barrel, 8-cylinder, non-catalyst, 49 state).

Test vehicle carline	Engine code	Transmission	Inertia weight	Axle ratio	Average miles per gallon	Label miles per gallon ¹	Vehicle configuration sales
Ajax	1	M-3	3,500	2.73	16.1001	16	15,000
Do	2	A-3	3,500	2.56	15.9020	16	35,000
Boredom III	4	M-3	4,000	3.08	14.2343	14	10,000
Ajax	3	M-4	4,000	3.36	15.0000	15	15,000
Boredom III	8	A-3	4,000	2.56	13.8138	14	25,000
Do	5	A-3	4,500	3.08	13.2203	13	20,000
Castor	5	A-3	5,000	3.08	10.6006	11	40,000

¹The vehicle configuration fuel economy values, rounded to the nearest mile per gallon, are the fuel economy values that would be used on specific labels for that vehicle configuration.

Step II. Group vehicle fuel economy and sales data according to base level combinations within this basic engine.

	Transmission	Inertia weight	Miles per gallon	Projected vehicle configuration sales
Base level:				
A	Manual-3	3,500	16.1001	15,000
B	Automatic	3,500	15.9020	35,000
C	Manual-3	4,000	14.2343	10,000
C	Manual-4	4,000	15.0000	15,000
D	Automatic	4,000	13.8138	25,000
Edo	4,500	13.2203	20,000
Fdo	5,000	10.6006	40,000

Step III. Determine base level fuel economy values.

A. For all the base levels except the base level which includes 4,000 pound, manual transmission data, the base level fuel economy is as noted in Step II since only one vehicle configuration was tested within each of these base levels.

	Miles per gallon
3,500 lb/manual transmission	16.1001
3,500 lb/automatic transmission	15.9020
4,000 lb/automatic transmission	13.8138
4,500 lb/automatic transmission	13.2203
5,000 lb/automatic transmission	10.6006

B. Since data from more than one vehicle configuration are included in the 4,000-pound, manual transmission base level, this fuel economy is harmonically averaged in proportion to the percentage of total sales of all vehicle configurations tested within that base level represented by each vehicle configuration tested within that base level.

$$\text{Base level fuel econ.} = \frac{1}{\left[\frac{\text{Fraction of total sales of configurations tested represented by configuration No. 1 sales}}{\left[\frac{1}{\text{Configuration No. 1 fuel economy}} \right]} + \left[\frac{\text{Fraction of total sales of configurations tested represented by configuration No. 2 sales}}{\left[\frac{1}{\text{Configuration No. 2 fuel economy}} \right]} + \dots \right]}$$

Base Level: Manual, 4,000 pounds.

$$\frac{1}{\left[\frac{10000}{25000} \right] \frac{1}{14.2343} + \left[\frac{15000}{25000} \right] \frac{1}{15.0000}} = 14.6840 \text{ mi/gal}$$

Therefore, the 4,000 pound/manual transmission fuel economy is 14.6840 mi/gal.

4,000 pound/manual transmission=14.6840 mi/gal

Note that the car line of the test vehicle using a given engine makes no difference—only the weight and transmission do.

Step IV. For each model type offered by the manufacturer with that basic engine, determine the sales fraction represented by each inertia weight/transmission class combination and the corresponding fuel economy.

Ajax:		
Manual	1.0000 at 3,500 lb	16.1001
Automatic	0.3000 at 3,500 lb	15.9020
	0.7000 at 4,000 lb	13.8138
Dodo:		
Manual	0.4000 at 3,500 lb	16.1001
	0.6000 at 4,000 lb	14.6840
Automatic	0.3000 at 3,500 lb	15.9020
	0.7000 at 4,000 lb	13.8138
Boredom III:		
Manual	1.0000 at 4,000 lb	14.6840
Automatic	0.2500 at 4,000 lb	13.8138
	0.7500 at 4,500 lb	13.2203
Castor:		
Automatic	0.2000 at 4,500 lb	13.2203
	0.8000 at 5,000 lb	10.6006

Step V. Determine fuel economy for each model type (that is, car line/basic engine/transmission class combination).

Ajax, 300-2 barrel, automatic, MPG=

The fraction of Ajax vehicles using the 300-2 bbl, engine which fall in the 3,500 lb inertia weight class with an automatic transmission.	+	The fraction of Ajax vehicles using the 300-2 bbl, engine which fall in the 4,000 lb inertia weight class with an automatic transmission.
Fuel economy for 300-2 bbl, 3,500 lb automatic transmission base level.		Fuel economy for 300-2 bbl, 4,000 lb automatic transmission base level.
Ajax, 300-2 barrel, automatic, MPG	=	14.3803
$\frac{0.3000}{15.9020}$		$\frac{0.7000}{13.8138}$
Similarly, Ajax, 300-2 barrel, manual MPG = 16.1 16 MPG ¹		

$$\text{Dodo, 300-2 barrel, manual MPG} = \frac{1}{\frac{0.4000}{16.1001} + \frac{0.6000}{14.6840}} = 15.2185, 15 \text{ mi/gal}^1$$

$$\text{Dodo, 300-2 barrel, automatic MPG} = \frac{1}{\frac{0.3000}{15.9020} + \frac{0.7000}{13.8138}} = 14.3803, 14 \text{ mi/gal}^1$$

Boredom III, 300-2 barrel, manual MPG = 14.6840, 15 mi/gal¹

$$\text{Boredom III, 300-2 barrel, automatic MPG} = \frac{1}{\frac{0.2500}{13.8138} + \frac{0.7500}{13.2203}} = 13.3638, 13 \text{ mi/gal}^1$$

$$\text{Castor, 300-2 barrel, automatic MPG} = \frac{1}{\frac{0.2000}{13.2203} + \frac{0.8000}{10.6006}} = 11.0381, 11 \text{ mi/gal}^1$$

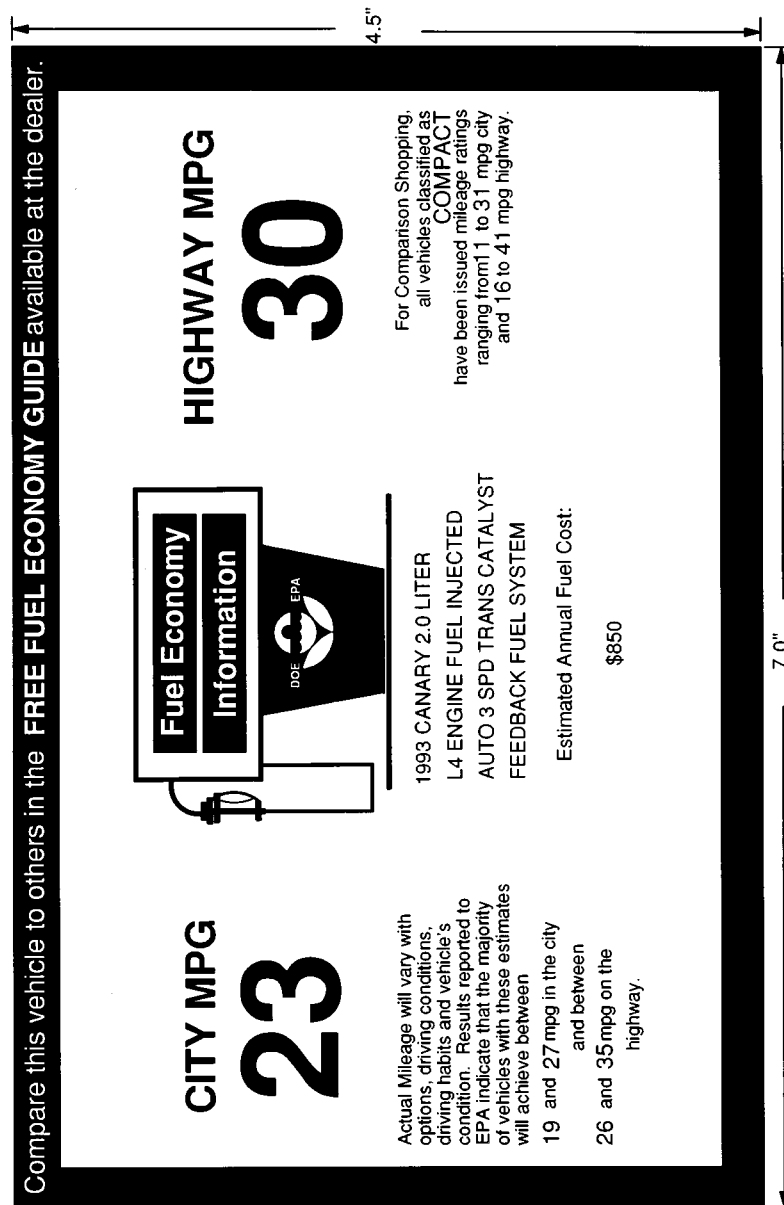
Note that even though no Dodo was actually tested, this approach permits its fuel economy figure to be estimated, based on the inertia weight distribution of projected Dodo sales within a specific engine and transmission grouping.

¹ The model type fuel economy values, rounded to the nearest mile per gallon, are the fuel economy values as used on general labels for that model year.

[41 FR 49766, Nov. 10, 1976]

APPENDICES IV—VII [RESERVED]

APPENDIX VIII TO PART 600—FUEL ECONOMY LABEL FORMATS



a. Gasoline-fueled vehicle label

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

**M85
CITY MPG**

14

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 11 and 17 mpg in the city and between 15 and 21 mpg on the highway.

**Fuel Economy
Information**

DOE EPA

**M85
HIGHWAY MPG**

18

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 10 to 18 mpg city and 14 to 22 mpg highway.

1993 PARROT 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

Estimated Annual Fuel Cost:
\$570

*** This vehicle operates on M85 FUEL only.**

b. Dedicated M85-fueled vehicle label

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

**GASOLINE
EQUIVALENT
CITY MPG**

22

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 18 and 26 mpg in the city and between 25 and 34 mpg on the highway.

NATURAL GAS*

Fuel Economy Information

DOE EPA

1993 FINCH 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

Estimated Annual Fuel Cost: \$500

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 18 to 30 mpg city and 24 to 36 mpg highway.

All fuel economy values on this label pertain to gasoline equivalent fuel economy. To convert these values into units of miles per 100 cubic feet of natural gas, multiply by 0.823.

**GASOLINE
EQUIVALENT
HIGHWAY MPG**

29

*** This vehicle operates on NATURAL GAS FUEL only.**

c. Dedicated natural gas-fueled vehicle label

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

**GASOLINE
EQUIVALENT
CITY MPG**

22

NATURAL GAS*

**GASOLINE
EQUIVALENT
HIGHWAY MPG**

29

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 18 and 26 mpg in the city and between 25 and 34 mpg on the highway.

1993 FINCH 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

Estimated Annual Fuel Cost:
\$500

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 18 to 30 mpg city and 24 to 36 mpg highway. All fuel economy values on this label pertain to gasoline equivalent fuel economy. The fuel economy in units of miles per [units used in retail] is estimated to be [] in the city, and [] on the highway.

*** This vehicle operates on NATURAL GAS FUEL only.**

d. Dedicated natural gas-fueled vehicle label - optional

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

**GASOLINE
CITY MPG**

24

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 20 and 28 mpg in the city and between 25 and 35 mpg on the highway.

DUAL FUEL*

**Fuel Economy
Information**

DOE EPA

**GASOLINE
HIGHWAY MPG**

30

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 18 to 30 mpg city and 24 to 36 mpg highway.

All fuel economy values on this label pertain to **GASOLINE** fuel usage. **M85** fuel usage will yield different values. See the Free Fuel Economy Guide for information on **M85**.

1993 PARROT 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

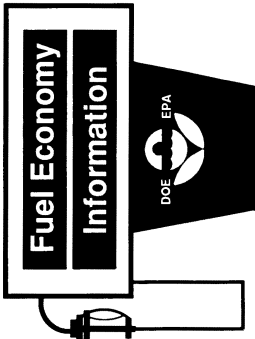
Estimated Annual Fuel Cost: \$590

*** This vehicle operates on METHANOL (M85) and GASOLINE.**

e. Methanol dual fuel vehicle label

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

**GASOLINE
CITY MPG**
24

DUAL FUEL*


**GASOLINE
HIGHWAY MPG**
30

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 20 and 28 mpg in the city and between 25 and 35 mpg on the highway.

1993 PARROT 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 18 to 30 mpg city and 24 to 36 mpg highway.

The fuel economy while using **M85** is estimated to be 14 mpg in the city and 18 mpg on the highway. See the Free Fuel Economy Guide for other information on **M85**

Estimated Annual Fuel Cost:	
Using M85	\$550
Using Gasoline	\$590

*** This vehicle operates on METHANOL (M85) and GASOLINE.**

f. Methanol dual fuel vehicle label - optional

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.*

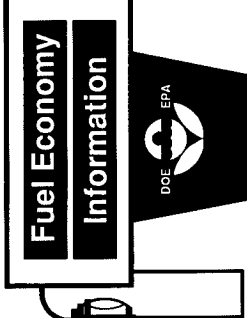
GASOLINE
CITY MPG

24

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 20 and 28 mpg in the city and between 25 and 35 mpg on the highway.

DUAL FUEL*

Fuel Economy Information



1993 FINCH 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

Estimated Annual Fuel Cost: \$590

GASOLINE
HIGHWAY MPG

30

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 18 to 30 mpg city and 24 to 36 mpg highway.

All fuel economy values on this label pertain to **GASOLINE** fuel usage.

NATURAL GAS fuel usage will yield different values. See the Free Fuel Economy Guide for information on **NATURAL GAS**.

*** This vehicle operates on NATURAL GAS or GASOLINE.**

g. Natural gas dual fuel vehicle label

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

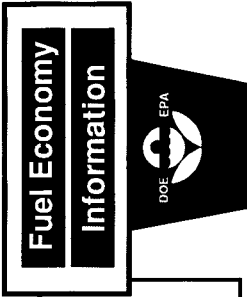
**GASOLINE
CITY MPG**

24

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between 20 and 28 mpg in the city and between 25 and 35 mpg on the highway.

DUAL FUEL*

Fuel Economy Information



1993 FINCH 2.0 LITER
L4 ENGINE FUEL INJECTED
AUTO 3 SPD TRANS CATALYST
FEEDBACK FUEL SYSTEM

Estimated Annual Fuel Cost:
Using Natural Gas \$500
Using Gasoline \$590

**GASOLINE
HIGHWAY MPG**

30

For Comparison Shopping, all vehicles classified as **COMPACT** have been issued mileage ratings ranging from 18 to 30 mpg city and 24 to 36 mpg highway.

The fuel economy while using **NATURAL GAS** is estimated to be **??** [units] in the city and **??** [units] on the highway. See the Free Fuel Economy Guide for other information on **NATURAL GAS**

*** This vehicle operates on NATURAL GAS or GASOLINE.**

h. Natural gas dual fuel vehicle label - optional

[59 FR 39661, Aug. 3, 1994]

**PART 610—FUEL ECONOMY
RETROFIT DEVICES**

**TEST PROCEDURES AND EVALUATION
CRITERIA**

TEST PROCEDURES AND EVALUATION CRITERIA

Subpart A—General Provisions

Sec.

- 610.10 Program purpose.
- 610.11 Definitions.
- 610.12 Program initiative.
- 610.13 Program structure.
- 610.14 Payment of program costs.
- 610.15 Eligibility for participation.
- 610.16 Applicant's responsibilities.
- 610.17 Application format.

**Subpart B—Evaluation Criteria for the
Preliminary Analysis**

- 610.20 General.
- 610.21 Device functional category and vehicle system effects.
- 610.22 Device integrity.
- 610.23 Operator interaction effects.
- 610.24 Validity of test data.
- 610.25 Evaluation of test data.

Subpart C—Test Requirement Criteria

- 610.30 General.
- 610.31 Vehicle tests for fuel economy and exhaust emissions.
- 610.32 Test fleet selection.
- 610.33 Durability tests.
- 610.34 Special test conditions.
- 610.36 Driveability and performance tests.

**Subpart D—General Vehicle Test
Procedures**

- 610.40 General.
- 610.41 Test configurations.
- 610.42 Fuel economy measurement.
- 610.43 Chassis dynamometer procedures.

Subpart E—Durability Test Procedures

- 610.50 Test configurations.
- 610.51 Mileage accumulation procedure.
- 610.52 Maintenance.

Subpart F—Special Test Procedures

- 610.60 Non-standard ambient conditions.
- 610.61 Engine dynamometer tests.
- 610.62 Driveability tests.
- 610.63 Performance tests.
- 610.64 Track test procedures.
- 610.65 Other test procedures.

AUTHORITY: Sec. 511, Motor Vehicle Information and Cost Savings Act, as amended (sec. 301, Pub. L. 94-163, 89 Stat. 915 (15 U.S.C. 2011)).

SOURCE: 44 FR 17946, Mar. 23, 1979, unless otherwise noted.

Subpart A—General Provisions

§ 610.10 Program purpose.

(a) The purpose of an evaluation program initiated under these rules is to determine, in accordance with standardized procedures, the performance of various retrofit devices applicable to automobiles for which fuel economy improvement claims are made, and to compile and disseminate the results of the evaluation. It should be stressed that the role of this program will be the generation, analysis and dissemination of technical data, and not the approval or certification of retrofit devices.

(1) Through engineering or statistical analysis of data from vehicle tests, the evaluation program will determine the effects on fuel economy, exhaust emissions, durability and driveability of the applicable vehicles due to the installation or use of the devices. The evaluation program will also include additional procedures, whenever determined by the Administrator as necessary, to evaluate the durability of the devices themselves, their effects on vehicle durability or other effects only evident over the course of extended mileage accumulation.

(b) Data generated in an evaluation program by the Administrator of the Environmental Protection Agency (EPA) are public information and will be published in the FEDERAL REGISTER and elsewhere for use by the Federal Trade Commission and the public. The results of any evaluation conducted by the Administrator may be used in any subsequent investigation or enforcement action in the event that a device is marketed in violation of Federal or state law.

§ 610.11 Definitions.

(a) Except as specifically defined below, all terms used in this part which are defined in 40 CFR part 86 or 40 CFR part 600 shall have the meanings provided therein.

(1) "Retrofit device" or "device" means:

(i) Any component, equipment, or other device (except a flow measuring